



SEQUENCE LISTING

<110> Zhang, Jingwu Z.
Ho, Walter Kowk Keung
Zhang, Dongqing
Sun, Wei

<120> T Cell Receptor CDR3 Sequence and Methods for
Detecting and Treating Rheumatoid Arthritis

<130> D6622

<140> US 10/612,468
<141> 2003-07-02

<160> 168

<210> 1
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> part of the complementary determining region-3 (CDR3)
in the V(16 family (BV16 gene) of T cell receptors
(TCR) in patients with rheumatoid arthritis (RA)

<400> 1
agccaagctg acgggaccca t 21

<210> 2
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> part of the complementary determining region-3
(CDR3) in the V(14 family (BV14 gene) of TCR in
patients with RA

<400> 2
agttccgggg gcagtctgtt c 21

<210> 3
<211> 7

<212> PRT
 <213> Homo sapiens

 <220>
 <221> Peptide
 <223> conserved amino acid sequence derived from CDR3 of
 TCR beta-chain BV16 in patients with RA

 <400> 3
 Ser Gln Ala Asp Gly Thr His
 5

 <210> 4
 <211> 7
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Peptide
 <223> conserved amino acid sequence derived from CDR3 of
 TCR beta-chain BV14 in patients with RA

 <400> 4
 Ser Ser Gly Gly Ser Leu Phe
 5

 <210> 5
 <211> 4
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Peptide
 <223> amino acid sequence motif derived from CDR3 of TCR
 beta-chain BV16 in patients with RA

 <400> 5
 Ser Trp Gly Gly

 <210> 6
 <211> 113
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> amino acid sequence of human (beta-chain variable

region V(14 of T cell receptors

```
<400>      6
Met Gly Pro Gln Leu Leu Gly Tyr Val Val Leu Cys Leu Leu Gly
      5      10      15
Ala Gly Pro Leu Glu Ala Gln Val Thr Gln Asn Pro Arg Tyr Leu
      20      25      30
Ile Thr Val Thr Gly Lys Lys Leu Thr Val Thr Cys Ser Gln Asn
      35      40      45
Met Asn His Glu Tyr Met Ser Trp Tyr Arg Gln Asp Pro Gly Leu
      50      55      60
Gly Leu Arg Gln Ile Tyr Tyr Ser Met Asn Val Glu Val Thr Asp
      65      70      75
Lys Gly Asp Val Pro Glu Gly Tyr Lys Val Ser Arg Lys Glu Lys
      80      85      90
Arg Asn Phe Pro Leu Ile Leu Glu Ser Pro Ser Pro Asn Gln Thr
      95     100     105
Ser Leu Tyr Phe Cys Ala Ser Ser
      110
```

```
<210>      7
<211>      96
<212>      PRT
<213>      Homo sapiens
```

```
<220>
<221>      Domain
<223>      amino acid sequence of human (beta-chain variable
            region V(16 of T cell receptors
```

```
<400>      7
Ile Glu Ala Gly Val Thr Gln Phe Pro Ser His Ser Val Ile Glu
      5      10      15
Lys Gly Gln Thr Val Thr Leu Arg Cys Asp Pro Ile Ser Gly His
      20      25      30
Asp Asn Leu Tyr Trp Tyr Arg Arg Val Met Gly Lys Glu Ile Lys
      35      40      45
Phe Leu Leu His Phe Val Lys Glu Ser Lys Gln Asp Glu Ser Gly
      50      55      60
Met Pro Asn Asn Arg Phe Leu Ala Glu Arg Thr Gly Gly Thr Tyr
      65      70      75
Ser Thr Leu Lys Val Gln Pro Ala Glu Leu Glu Asp Ser Gly Val
      80      85      90
Tyr Phe Cys Ala Ser Ser
      95
```

<210> 8
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> forward primer specific for TCR BV1 used in real-time
 PCR analysis

 <400> 8
 aagcacctga tcacagcaac t 21

 <210> 9
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV1 used in real-time
 PCR analysis

 <400> 9
 tagttcagag tgcaagtcag g 21

 <210> 10
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> forward primer specific for TCR BV2 used in real-time
 PCR analysis

 <400> 10
 ggttatctgt aagagtggaa cct 23

 <210> 11
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV2 used in real-time

PCR analysis

```

<400>      11
aggatgggca ctggtcactg t                               21

<210>      12
<211>      24
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      forward primer specific for TCR BV3 used in real-time
              PCR analysis

<400>      12
tcgagatatc tagtcaaaag gacg                             24

<210>      13
<211>      21
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      reverse primer specific for TCR BV3 used in real-time
              PCR analysis

<400>      13
ggtgctggcg gactccagaa t                               21

<210>      14
<211>      22
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      forward primer specific for TCR BV4 used in real-time
              PCR analysis

<400>      14
aagcagggat atctgtcaac gt                               22

<210>      15
<211>      21
<212>      DNA

```

```

<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      reverse primer specific for TCR BV4 used in real-time
              PCR analysis

<400>      15
ttcagggctc atgttgctca c                               21

<210>      16
<211>      21
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      forward primer specific for TCR BV5 used in real-time
              PCR analysis

<400>      16
gatcaaaacg agaggacagc a                               21

<210>      17
<211>      22
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      reverse primer specific for TCR BV5 used in real-time
              PCR analysis

<400>      17
agcaccaagg cgctcacatt ca                             22

<210>      18
<211>      21
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      forward primer specific for TCR BV6 used in real-time
              PCR analysis

```

<400>	18	
ctcaggtgtg atccaatttc a		21
<210>	19	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	reverse primer specific for TCR BV6 used in real-time PCR analysis	
<400>	19	
cccccgcgtct gtgcgctgga t		21
<210>	20	
<211>	25	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	forward primer specific for TCR BV7 used in real-time PCR analysis	
<400>	20	
catgggaatg acaaataaga agtct		25
<210>	21	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	reverse primer specific for TCR BV7 used in real-time PCR analysis	
<400>	21	
tggctgcagg gcgtgtaggt g		21
<210>	22	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	

<220>
 <221> primer_bind
 <223> forward primer specific for TCR BV8 used in real-time
 PCR analysis

<400> 22
 ccccgccatg aggtgacaga g 21

<210> 23
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV8 used in real-time
 PCR analysis

<400> 23
 gagtccctgg gttctgaggg c 21

<210> 24
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> forward primer specific for TCR BV9 used in real-time
 PCR analysis

<400> 24
 ccaaaatacc tggtcacaca g 21

<210> 25
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV9 used in real-time
 PCR analysis

<400> 25
 ccagggaatt gatgtgaaga tt 22

<210> 26
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> forward primer specific for TCR BV10 used in real-time
 PCR analysis

 <400> 26
 acctagactt ctggtcaaag ca 22

 <210> 27
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV10 used in real-time
 PCR analysis

 <400> 27
 ggactggatc tccaaggtac a 21

 <210> 28
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> forward primer specific for TCR BV11 used in real-time
 PCR analysis

 <400> 28
 ttatagggac aggaaagaag atc 23

 <210> 29
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV11 used in real-time

PCR analysis

```

<400>      29
atgtgagggc ctggcagact c                               21

<210>      30
<211>      23
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      forward primer specific for TCR BV12 used in real-time
              PCR analysis

<400>      30
caagacacaa gatcacagag aca                               23

<210>      31
<211>      21
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      reverse primer specific for TCR BV12 used in real-time
              PCR analysis

<400>      31
ggcagcagac tccagagtga g                               21

<210>      32
<211>      23
<212>      DNA
<213>      Artificial Sequence

<220>
<221>      primer_bind
<223>      forward primer specific for TCR BV13 used in real-time
              PCR analysis

<400>      32
tgaagacagg acagagcatg aca                               23

<210>      33
<211>      21
<212>      DNA

```

<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	reverse primer specific for TCR BV13 used in real-time PCR analysis	
<400>	33	
	cacagatgtc tgggagggag c	21
<210>	34	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	forward primer specific for TCR BV14 used in real-time PCR analysis	
<400>	34	
	accaagata cctcatcaca gtg	23
<210>	35	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	reverse primer specific for TCR BV14 used in real-time PCR analysis	
<400>	35	
	agaggtctgg ttggggctgg g	21
<210>	36	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	forward primer specific for TCR BV15 used in real-time PCR analysis	
<400>	36	

tcacaaagac aggaaagagg att	23
<210> 37	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> primer_bind	
<223> reverse primer specific for TCR BV15 used in real-time PCR analysis	
<400> 37	
ggggatggca gactctaggg a	21
<210> 38	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> primer_bind	
<223> forward primer specific for TCR BV16 used in real-time PCR analysis	
<400> 38	
gttccccagc cacagcgtaa ta	22
<210> 39	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> primer_bind	
<223> reverse primer specific for TCR BV16 used in real-time PCR analysis	
<400> 39	
cagttctgca ggctgcacct t	21
<210> 40	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	

<221> primer_bind
 <223> forward primer specific for TCR BV17 used in real-time
 PCR analysis

<400> 40
 gtccccaag tacctgttca ga 22

<210> 41
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV17 used in real-time
 PCR analysis

<400> 41
 agctgtcggg ttcttttggg c 21

<210> 42
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> forward primer specific for TCR BV18 used in real-time
 PCR analysis

<400> 42
 agacacctgg tcaggaggag g 21

<210> 43
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV18 used in real-time
 PCR analysis

<400> 43
 tgccgaatct cctcgacta c 21

<210> 44

<211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> forward primer specific for TCR BV19 used in real-time
 PCR analysis

 <400> 44
 ccaggacatt tgggtcaaagg aaaa 24

 <210> 45
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV19 used in real-time
 PCR analysis

 <400> 45
 cagtgccgtg tctcccgggtt c 21

 <210> 46
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> forward primer specific for TCR BV20 used in real-time
 PCR analysis

 <400> 46
 gaccctgggtg cagcctgtg 19

 <210> 47
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV20 used in real-time
 PCR analysis

<400>	47	
gaggaggagc ttcttagaac t		21
<210>	48	
<211>	24	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	forward primer specific for TCR BV21 used in real-time PCR analysis	
<400>	48	
cccagatata agattacaga gaaa		24
<210>	49	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	reverse primer specific for TCR BV21 used in real-time PCR analysis	
<400>	49	
ctggatcttg agagtggagt c		21
<210>	50	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<221>	primer_bind	
<223>	forward primer specific for TCR BV22 used in real-time PCR analysis	
<400>	50	
cacagatggg acaggaagtg atc		23
<210>	51	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV22 used in real-time
 PCR analysis

<400> 51
 gtcctccagc tttgtggacc g 21

<210> 52
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> forward primer specific for TCR BV23 used in real-time
 PCR analysis

<400> 52
 aagagggaaa cagccactct g 21

<210> 53
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BV23 used in
 real-
 time PCR analysis

<400> 53
 cagctccaag gagctcatgt t 21

<210> 54
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> forward primer specific for TCR BV24 used in real-time
 PCR analysis

<400> 54

ccaagatacc aggttaccca gttt	24
<210> 55	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> primer_bind	
<223> reverse primer specific for TCR BV24 used in real-time PCR analysis	
<400> 55	
caggcctggt gagcggatgt c	21
<210> 56	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> primer_bind	
<223> forward primer specific for TCR BV25 used in real-time PCR analysis	
<400> 56	
aaaacatctt gtcagagggg aa	22
<210> 57	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> primer_bind	
<223> reverse primer specific for TCR BV25 used in real-time PCR analysis	
<400> 57	
tgaatcctca agcttcgtag c	21
<210> 58	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	

<221> primer_bind
 <223> forward primer specific for TCR BC used in real-time
 PCR analysis

<400> 58
 cagcgccctt gtgttgatg 19

<210> 59
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> reverse primer specific for TCR BC used in real-time
 PCR analysis

<400> 59
 aagcgctggc aaaagaagaa 20

<210> 60
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> BC primer used for run-off reactions

<400> 60
 cgacctcggg tgggaaca 18

<210> 61
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> FAM (expand)-labeled BC primer used for run-off
 reactions

<400> 61
 cacagcgacc tcgggtggg 19

<210> 62
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 62
 actgtgagtc tggcgccttg t 21

 <210> 63
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 63
 acaacgggta acttggtccc cgaa 24

 <210> 64
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 64
 ggtcctctac aacagtgagc caac 24

 <210> 65
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 65
aagagagaga gctgggttcc actg 24

<210> 66
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 66
ggagagtcga gttccatca 19

<210> 67
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 67
tgtcacagtg agcctgggtcc catt 24

<210> 68
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 68
cctggcccgga agaactgctc a 21

<210> 69
<211> 24

<212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 69
 gtcctccagt acgctcagcc taga 24

 <210> 70
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 70
 tgcctggggcc aaaatactgc g 21

 <210> 71
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

 <400> 71
 tccccgcgcc gaagtactga a 21

 <210> 72
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 72
 tcgagcacca ggagccgc 18

<210> 73
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 73
 ctgctgccgg ccccgaaagt c 21

<210> 74
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> primer_bind
 <223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 74
 tgaccgtgag cctggtgccc g 21

<210> 75
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 75
 Tyr Phe Cys Ala Ser Ser Gln Asp Ser Gly Gly Gly Gly Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 76
 <211> 60

<212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

 <400> 76
 tattttctgtg ccagcagcca agatagcggg gggggaggtg agcagttctt 50
 cgggccagga 60

 <210> 77
 <211> 20
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

 <400> 77
 Tyr Phe Cys Ala Ser Ser Arg Leu Gly Gln Gly Tyr Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

 <210> 78
 <211> 60
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

 <400> 78
 tattttctgtg ccagcagccg actgggacag ggctacaatg agcagttctt 50
 cgggccagga 60

 <210> 79
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 79
 Tyr Phe Cys Ala Ser Ser Gln Asp Leu Asp Ser Tyr Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 80
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 80
 tattttctgtg ccagcagcca agatctggac agctacaatg agcagttctt 50
 cgggccagga 60

<210> 81
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 81
 Tyr Phe Cys Ala Ser Ser Gln Gly Thr Ser Gly Ile Thr Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 82
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

 <400> 82
 tattttctgtg ccagcagcca ggggactagc gggatcactg agcagttctt 50
 cgggccagga 60

 <210> 83
 <211> 20
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

 <400> 83
 Tyr Phe Cys Ala Ser Ser Gln Leu Ala Gly Pro Tyr Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

 <210> 84
 <211> 60
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

 <400> 84
 tattttctgtg ccagcagcca gctagcggga ccctacaatg agcagttctt 50
 cgggccagga 60

 <210> 85
 <211> 20
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived

from ST specimen of RA patient

<400> 85
Tyr Phe Cys Ala Ser Ser Leu Leu Gly Thr Val Ser Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 86
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 86
tattttctgtg ccagcagcct tctcggcaca gtatcctatg agcagttctt 50
cgggccaggc 60

<210> 87
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 87
Tyr Phe Cys Ala Ser Pro Leu Gly Thr Ala Leu Ser Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 88
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 88
tatttctgtg ccagccccct tgggacagcg ctatcctacg agcagtactt 50
cgggccgggc 60

<210> 89
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 89
Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 90
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 90
tatttctgtg ccagcagcca agctgacggg acccattacg agcagtactt 50
cgggccgggc 60

<210> 91
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 91
 Tyr Phe Cys Ala Ser Ser Gln Asp Lys Gly His Phe Tyr Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 92
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 92
 tattttctgtg ccagcagcca agataaggga cacttctacg agcagtactt 50
 cgggcccgggc 60

<210> 93
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 93
 Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 94
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 94
tatttctgtg ccagcagcca agctgacggg acccattacg agcagtactt 50
cgggccgggc 60

<210> 95
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 95
Tyr Phe Cys Ala Ser Ser Trp Gly Gly Thr Asp Ile Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 96
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV16 clonotype derived
from ST specimen of RA patients

<400> 96
tatttctgtg ccagcagctg gggcgggaca gacatctacg agcagtactt 50
cgggccgggc 60

<210> 97
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived
from ST specimen of RA patient

<400> 97
Tyr Phe Cys Ala Ser Ser Leu Leu Gly Thr Val Ser Tyr Glu Gln
5 10 15

Phe Phe Gly Pro Gly
20

<210> 98
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 98
tatttctgtg ccagcagcct tctcggcaca gtatcctacg agcagtactt 50
cgggccgggc 60

<210> 99
<211> 18
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

<400> 99
Tyr Phe Cys Ala Ser Ser Gln Gly Leu Asn Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 100
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 100
tatttctgtg ccagcagcca aggccttaac actgaagctt tctttggaca aggc 54

<210> 101
<211> 18

<212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

 <400> 101
 Tyr Phe Cys Ala Ser Arg Ala Ser Arg Tyr Thr Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly

 <210> 102
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

 <400> 102
 tatttctgtg ccagcagggc aagcaggtac actgaagctt tctttggaca aggc 54

 <210> 103
 <211> 18
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

 <400> 103
 Tyr Phe Cys Ala Ser Arg Ala Ser Arg Tyr Thr Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly

 <210> 104
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<210> 111
 <211> 18
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

 <400> 111
 Tyr Phe Cys Ala Ser Ser Trp Gly Gly Asn Thr Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly

 <210> 112
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

 <400> 112
 tattttctgtg ccagcagctg ggggggcaac actgaagctt tctttggaca aggc 54

 <210> 113
 <211> 20
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 113
 Tyr Phe Cys Ala Ser Ser Pro Thr Arg Asp Arg Gly Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

 <210> 114
 <211> 63
 <212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 114
tacttctgtg ccagcagttc cacgcgggac aggggaaata atgagcagtt 50
cttcggggcca gga 63

<210> 115
<211> 22
<212> PRT
<213> Homo sapiens

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 115
Tyr Phe Cys Ala Ser Ser Ser Pro Ile Ala Gly Ser Ser Tyr Asn
5 10 15
Glu Gln Phe Phe Gly Pro Gly
20

<210> 116
<211> 63
<212> DNA
<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 116
tacttctgtg ccagcagttc cccaatagcg gggagctcca atgagcagtt 50
cttcggggcca gga 63

<210> 117
<211> 20
<212> PRT
<213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 117
 Tyr Phe Cys Ala Ser Ser Phe Trp Ala Pro Thr Asp Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

<210> 118
 <211> 63
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 118
 tactttctgtg ccagcagttt ctgggcccct acggacaata atgagcagtt 50
 cttcggggcca gga 63

<210> 119
 <211> 21
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 119
 Tyr Phe Cys Ala Ser Ser Ser Ser Ser Pro Thr Ser Tyr Asn Glu
 5 10 15
 Gln Phe Phe Gly Pro Gly
 20

<210> 120
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 120
 tactttctgtg ccagcagttc tagcagcccc acctcctacg agcagttctt
 50
 cgggccagga
 60

 <210> 121
 <211> 20
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 121
 Tyr Phe Cys Ala Ser Ser Pro Arg Glu Gly Leu Leu Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
 20

 <210> 122
 <211> 63
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 122
 tactttctgtg ccagcagccc tagggagggc ctcctcaata atgagcagtt 50
 cttcggggcca gga 63

 <210> 123
 <211> 21
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 123
 Tyr Phe Cys Ala Ser Ser Pro Trp Thr Ser Gly Ser Gly Asn Glu
 5 10 15
 Gln Phe Phe Gly Pro Gly
 20

<210> 124
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 124
 tactttctgtg ccagcagtc ctggactagc gggagtgggtg agcagttctt 50
 cgggccagga 60

<210> 125
 <211> 19
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 125
 Tyr Phe Cys Ala Ser Ser Leu Arg Thr Arg Phe Tyr Glu Gln Tyr
 5 10 15
 Phe Gly Pro Gly

<210> 126
 <211> 57
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 126
tactttctgtg ccagcagttt aaggacacgc ttctacgagc agttcttcgg gccagga 57

<210> 127
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 127
Tyr Phe Cys Ala Ser Ser Leu Thr Ser Gly Arg Gln Tyr Glu Gln
 5 10 15
Tyr Phe Gly Pro Gly
 20

<210> 128
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 128
tactttctgtg ccagcagttt gaccagcggg cgtcagtagc agcagttctt 50
cgggccagga 60

<210> 129
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 129
 Tyr Phe Cys Ala Ser Ser Ser Gly Gly Ser Leu Phe Tyr Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 130
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 130
 tactttctgtg ccagcagttc cggggggcagt ctgttctacg agcagttctt 50
 cgggccagga 60

<210> 131
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 131
 Tyr Phe Cys Ala Ser Ser Leu Ser Val Gly Ala Thr Tyr Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 132
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 132
tactttctgtg ccagcagttt atcggtcggg gctacctacg agcagttctt 50
cgggccagga 60

<210> 133
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 133
Tyr Phe Cys Ala Ser Ser Ser Gly Gly Ser Leu Phe Tyr Glu Gln
5 10 15
Tyr Phe Gly Pro Gly
20

<210> 134
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 134
tactttctgtg ccagcagttc cggggggcagt ctgttctacg agcagttctt 50
cgggccagga 60

<210> 135
<211> 20
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 135
Tyr Phe Cys Ala Ser Ser Pro Ser Ile Ser Ser His Tyr Glu Gln
5 10 15

Tyr Phe Gly Pro Gly
20

<210> 136
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 136
tacttctgtg ccagcagccc aagtattagt tcccactacg agcagttctt 50
cgggccagga 60

<210> 137
<211> 19
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 137
Tyr Phe Cys Ala Ser Ser Arg Asp Gly Val Ser Tyr Glu Gln Tyr
5 10 15
Phe Gly Pro Gly

<210> 138
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 138
tacttctgtg ccagcagtcg tgatgggggc tcctacgagc agttcttcgg gccagga 57

<210> 139

<210> 139
 <211> 19
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 139
 Tyr Phe Cys Ala Ser Ser Leu Ser Ser Thr Gly Arg Glu Gln Tyr
 5 10 15
 Phe Gly Pro Gly

<210> 140
 <211> 57
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 140
 tacttctgtg ccagcagttt atcttcgaca gggaggggagc agtacttcgg gccgggc 57

<210> 141
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 141
 Tyr Phe Cys Ala Ser Ser Leu Ser Phe Arg Leu Asp Tyr Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 142
 <211> 60
 <212> DNA

<212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 142
 tactttctgtg ccagcagttt atcgtttaga ctagactacg agcagttctt 50
 cgggccagga 60

<210> 143
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 143
 Tyr Phe Cys Ala Ser Ser Pro Ser Gly Gln Gly Ser Tyr Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 144
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 144
 tactttctgtg ccagcagtcc gtcgggacag gggtcctacg agcagttctt 50
 cgggccagga 60

<210> 145
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 145
 Tyr Phe Cys Ala Ser Ser Phe Gly Thr Val Leu Ser Tyr Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 146
 <211> 60
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 146
 tactttctgtg ccagcagttt tgggacagtc ctctcctacg agcagttctt 50
 cgggccagga 60

<210> 147
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 147
 Tyr Phe Cys Ala Ser Ser Pro Arg Leu Ala Gly Asp Lys Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

<210> 148
 <211> 61
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 148
 tactttctgtg ccagcagttcc ccgactagcgg ggagataaag gagcagtact 50
 tcgggccggg c 61

 <210> 149
 <211> 20
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 149
 Tyr Phe Cys Ala Ser Ser Leu Ser Ala Arg Thr Thr Tyr Glu Gln
 5 10 15
 Tyr Phe Gly Pro Gly
 20

 <210> 150
 <211> 60
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 150
 tactttctgtg ccagcagttt aagtgccagg acaacctacg agcagttctt 50
 cgggccagga 60

 <210> 151
 <211> 19
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived

from ST specimen of RA patients

<400> 151
Tyr Phe Cys Ala Ser Ser Leu Ile Gly Gly Asn Glu Lys Leu Phe
5 10 15
Leu Gly Ser Gly

<210> 152
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 152
tacttctgtg ccagcagttt gatagggggc aatgaaaaac tgttttttgg cagtgga 57

<210> 153
<211> 18
<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 153
Tyr Phe Cys Ala Ser Ser Leu Ser Gln Glu Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 154
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 154
tacttctgtg ccagagtta tcccaggaaa ctgaagcttt ctttggacaa ggc 53

<210> 155
 <211> 19
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 155
 Tyr Phe Cys Ala Ser Arg Ala Gly Thr Gly Phe Glu Lys Leu Phe
 5 10 15
 Phe Gly Ser Gly

<210> 156
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 156
 tactttctgtg ccagcagggc cgggacaggg tttaaactgt tttttggcag tgga 54

<210> 157
 <211> 18
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 157
 Tyr Phe Cys Ala Ser Ser Leu Ser Gln Asn Thr Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly

<210> 158
 <211> 54
 <212> DNA

<213> Artificial Sequence
 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients
 <400> 158
 tacttctgtg ccagcagtct gtcacagaac actgaagctt tctttggaca aggc 54
 <210> 159
 <211> 18
 <212> PRT
 <213> Homo sapiens
 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients
 <400> 159
 Tyr Phe Cys Ala Ser Ser Pro Arg Val Asn Thr Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly
 <210> 160
 <211> 53
 <212> DNA
 <213> Artificial Sequence
 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients
 <400> 160
 tacttctgtg ccagagtccc cgggtcaaca ctgaagcttt ctttggacaa ggc 53
 <210> 161
 <211> 18
 <212> PRT
 <213> Homo sapiens
 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<210> 165
 <211> 18
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 165
 Tyr Phe Cys Ala Ser Ser Ser Arg Gly Tyr Thr Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly

 <210> 166
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> CDS
 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 166
 tacttctgtg ccagcagttc caggggatac actgaagctt tctttggaca aggc 54

 <210> 167
 <211> 18
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> Domain
 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

 <400> 167
 Tyr Phe Cys Ala Ser Ser Ser Leu Ala Thr Ala Glu Ala Phe Phe
 5 10 15
 Gly Gln Gly

 <210> 168
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 168

tacttctgtg ccagcagttc cctcgctact gctgaagctt tctttggaca aggc 54